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Helminth Fauna of Bats in Japan XXV¹⁾

With 5 Text-figures

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ABSTRACT Systematic and faunistic studies of the cestodes found in 120 bats of two genera collected during the period from January to November, 1980, showed that a new and three known hymenolepidid cestodes were parasitized in the bats from Tokyo-to and the prefectures of Mie, Ōita, Iwate, Ehime, Tokushima, Kôchi and Gifu.

The data on the bats investigated and the cestodes found are given in Table 1, and the stations at which the collections were made are shown on the map (Fig. 1). The cestodes isolated from bats were classified into the following species: *Vamprolepis isensis*, *V. iwatensis*, *Hymenolepis rashomonensis* and *H. nishidai* sp. nov. All the measurements are given in millimetres.

On May 31, 1980, eight common horse-shoe bats, *Rhinolophus ferrumequinum*, and a Japanese large-footed bat, *Myotis macrodactylus*, were collected in an abandoned adit of the copper mine called Fukisaka Mine at Honai-chô, Ehime Prefecture. On dissection, *R. ferrumequinum* was infected by a number of cestodes, nematodes and trematodes, but *M. macrodactylus* was infected by only a few trematodes.

Hymenolepis nishidai sp. nov.

(Figs. 2–5)

Description. Small-sized hymenolepidid, strobila length 21–25; maximum width 0.4–0.5. Scolex 0.175–0.259 long by 0.180–0.231 wide. Suckers rounded, 0.084–0.091 in diameter, unarmed, weakly muscled. Rostellum rudimentary or absent. Neck absent, segmentation commencing almost immediately posterior to scolex. Strobila margin serrate. All proglottides wider than long. Genital pores unilateral, and located a little anterior to the middle proglottid margin.

Testes three in number, ovoid 0.049 by 0.035–0.042, arranged in a form of

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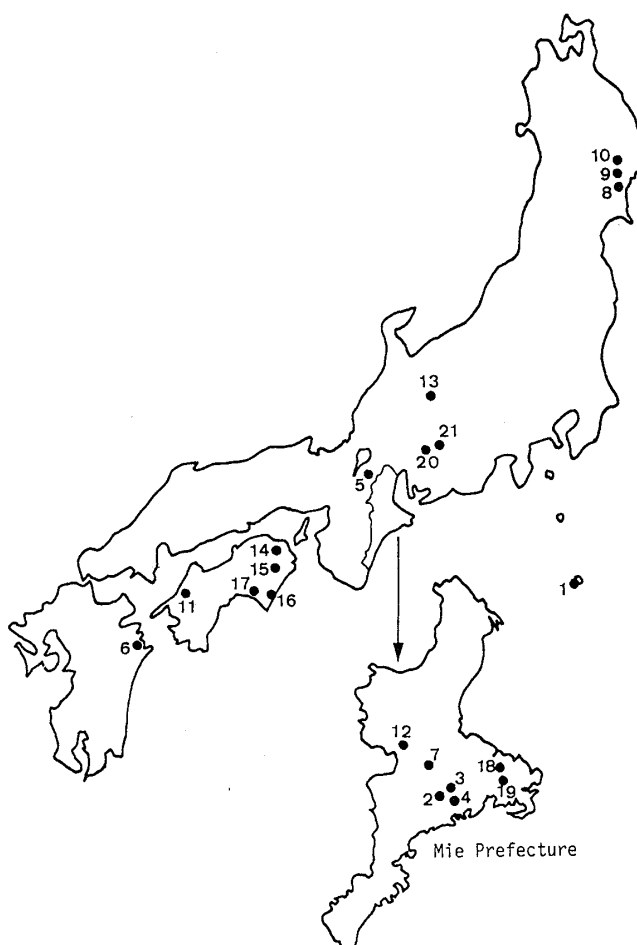


Fig. 1. Sketch map showing the collecting sites of the bats from which the cestodes examined were obtained.

triangle, one poral and two aporal. Cirrus small, unarmed. Cirrus sac large, 0.098 long by 0.021–0.028 wide. External seminal vesicle 0.056–0.070 by 0.028–0.035 and internal seminal vesicle 0.035–0.042 by 0.021, occupying almost whole of cirrus sac.

Ovary transversely elongate and distinctly trilobate, 0.154–0.188 wide. Vitelline gland elongate, postovarian, 0.070 by 0.077. Vagina open into genital atrium behind cirrus sac. Seminal receptacle sacculate and prominent in late mature proglottides, measuring 0.042–0.070 by 0.028–0.035. Uterus first appearing in strobila as spherical body gradually enlarges and fills up entire gravid proglottides. Fully developed eggs oval, 0.032–0.035 by 0.039, surrounded by four thin envelopes; onchosphere spherical, 0.028 in diameter; embryonic hooks 0.014 long.

Host. *Rhinolophus ferrumequinum*.

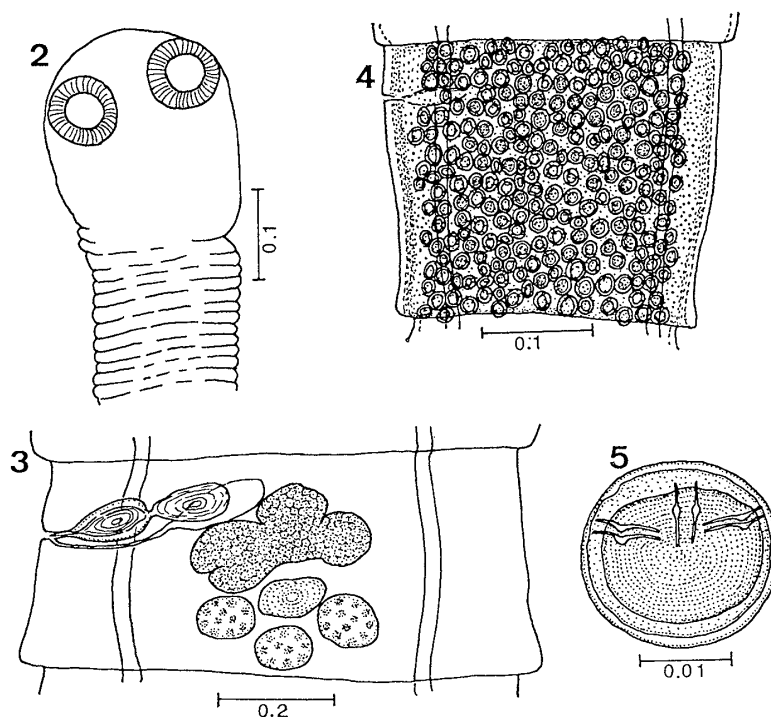
Habitat. Small intestine.

Locality and date. Honai-chô, Ehime Prefecture; May 31, 1980.

Table 1
Summary of cestodes found in bats collected during the period from January to November, 1980.

Serial No. of localities in Fig. 1	Locality	Date	Bat species	Number of bat			Cestode species	
				examined	infected	%		
1	Hachijō-fūketsu	Hachijō-chō, Tokyo-to	19-I-1980	<i>R. cornutus</i>	10	1	10	<i>Vampirolepis isensis</i>
2	Fujigano-no-ana	Ōmiya-chō, Mie Pref.	19-III-1980	<i>R. ferrum- equinum</i>	5	1	20	<i>Hymenolepis</i> sp.
3	Artificial cave	"	"	"	4	3	75	"
4	Koya-no-kōmori-ana	"	"	<i>R. cornutus</i>	10	3	30	<i>V. isensis</i>
5	Hiyo-no-ana	Eigenji-chō, Shiga Pref.	26-III-1980	<i>R. cornutus</i>	5	1	20	<i>V. isensis</i>
				<i>R. ferrum- equinum</i>	1	0	0	
6	Hitoboshi-dō	Usuki-shi, Ōita Pref.	30-III-1980	<i>R. cornutus</i>	12	1	8	<i>V. isensis</i>
7	Raceway	Iinan-chō, Mie Pref.	22-IV-1980	<i>R. ferrum- equinum</i>	3	1	33	<i>H. rashomonensis</i>
8	Akאו-ana	Rikuzentakata-shi, Iwate Pref.	17-V-1980	<i>R. cornutus</i>	10	3	30	<i>V. isensis</i>
9	Zatō-ana	"	"	<i>R. ferrum- equinum</i>	2	1	50	<i>H. rashomonensis</i>
10	Kōmori-ana	"	"	<i>R. cornutus</i>	9	2	22	<i>V. isensis</i>
11	Abandoned copper mine (Fukisaka Mine)	Honai-chō, Ehime Pref.	31-V-1980	<i>R. ferrum- equinum</i>	8	8	100	<i>H. nishidai</i> sp. nov.

Serial No. of localities in Fig. 1	Locality	Date	Bat species	Number of bat		Cestode species
				examined	infected %	
12	Vacant house	17-VII-1980	<i>R. ferrum- equinum</i>	1	0	0
13	Atago-iwaya	2-XI-1980	<i>R. cornutus</i>	12	1	8
	"	"	<i>R. ferrum- equinum</i>	5	5	100
14	Raceway	7-XI-1980	"	3	2	67
15	Himise-dô	8-XI-1980	"	5	3	60
16	Mikuro-dô	"	"	1	1	100
17	Ioki-dô	9-XI-1980	"	8	7	88
18	Hiuchiishi-no-ana	21-XI-1980	"	1	1	100
19	Haigama-no-ana	"	"	2	0	0
20	Abandoned manganese mine	30-XI-1980	"	2	1	50
21	Artificial cave	"	<i>R. cornutus</i>	1	0	0



Figs. 2-5. *Hymenolepis nishidai* sp. nov. — 2. Scolex. 3. Mature proglottid. 4 Senile proglottid. 5. Egg.

Type depository. Biological Laboratory, Nara University of Education, Nara, Japan.

Discussion. Seven species of the genus *Hymenolepis* have been recorded from the Japanese horse-shoe bat, *Rhinolophus ferrumequinum*. Of these, *H. rashomonensis* SAWADA seems closely related to the present species. However, *H. nishidai* is readily differentiated from that species by the absence of neck, and by the shape of ovary and vitelline gland.

Vampirolepis iwatensis SAWADA, 1975

This species was first recorded from *Rhinolophus cornutus* collected in Matsugawadô Cave of Iwate Prefecture. This time, *V. iwatensis* was isolated from the common horse-shoe bat, *Rhinolophus ferrumequinum*. For locality, see Table 1 and Fig. 1.

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